

**RUGGEDCOM**<sup>®</sup>  
**INDUSTRIAL STRENGTH NETWORKS**<sup>™</sup>



**RUGGEDNMS**<sup>™</sup>  
Network Management Software

# RuggedNMS<sup>™</sup>

**Version 1.5**

## **Installation Guide for Microsoft Windows**

Revision 1.1 - February 14, 2012

[www.RuggedCom.com](http://www.RuggedCom.com)

# RuggedNMS™: Version 1.5: Installation Guide for Microsoft Windows

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# 1. Welcome to RuggedNMS™

## 1.1. Introduction

Thank you for purchasing RuggedNMS™, RuggedCom's Network Management System software. RuggedNMS™ is used for the discovery, monitoring, and management of RuggedCom products and any other IP enabled devices on a network. This highly configurable, full-featured product records and reports on the availability and performance of network components and services. Device, network, and service failures are quickly detected and notifications are reported to a network engineer for immediate attention in order to reduce downtime.

Installed on a system running Microsoft Windows XP, Windows Server 2003, Windows 7 or Windows Server 2008 , RuggedNMS™ provides a web-based user interface that supports Microsoft Internet Explorer version 7.0 or higher and Firefox 3.6 or higher. The installation process is simplified through the use of an installation wizard, enabling users with a minimal knowledge of Windows system administration to easily install the software.

To install this software, you should have a general understanding of the Microsoft Windows operating system. A collection of scripts is included to help configure and administer RuggedNMS. Please refer to the *RuggedNMS™ User Guide* for a complete listing and description of RuggedNMS™ scripts.



*RuggedNMS™ must be installed on a computer system meeting the minimum requirements outlined in [Section 1.2, "RuggedNMS™ Installation Requirements"](#).*

## 1.2. RuggedNMS™ Installation Requirements

RuggedNMS™ has been verified to install and run correctly under:

- Microsoft Windows XP pro, Service Pack 2 (32 bit) or higher
- Microsoft Windows Server 2003 R2, Service Pack 1
- Microsoft Windows 7 (32 or 64 bit), Any
- Microsoft Windows Server 2008 R2



*The operating system must be installed with its default installation options. In particular, because RuggedNMS is designed to be the only application running on the system, you must not install applications or network services beyond the minimum set required for the installation and function of RuggedNMS™.*

The following is the recommended hardware required for running the RuggedNMS™ server:

- Intel Core 2 Quad-Core CPU, 2.4 GHz or higher
- 4 GB RAM
- 500 GB disk space

RuggedNMS™ requires the following software packages. These packages are included on the RuggedNMS™ installation disk and are installed during the RuggedNMS™ installation process:

- Apache Web Server version 2.2
- PostgreSQL version 8.3.11
- Sun Java version 1.6

The RuggedNMS™ web-based user interface supports Microsoft Internet Explorer version 7.0 or higher and Firefox 3.6 or higher. To use the RuggedNMS Mapping feature, web browsers require Adobe Flash Player version 10 or higher. Adobe Flash is not included on the installation disk; it must be installed from the Adobe web site.

RuggedNMS users are encouraged to periodically check the RuggedNMS web site at <http://www.ruggednms.com> to look for new or updated documentation, scripts and utilities.

## 1.3. Before Upgrading RuggedNMS™

If you are using a version of PostgreSQL earlier than version 8.3.11, you must uninstall PostgreSQL before installing RuggedNMS™ version 1.4.

To remove PostgreSQL, you must perform the following steps:

- Uninstall PostgreSQL from the Windows Control Panel program manager
- Delete the PostgreSQL installation folder
- Delete the Windows “postgres” user account

### Procedure 1.1. Uninstalling PostgreSQL

1. Launch the Windows Control Panel and select **Add or Remove Programs** or **Uninstall a program**.
2. From the list of installed applications, select and remove your existing version of PostgreSQL.
3. In Windows Explorer, navigate to and delete the folder `c:\Program Files\PostgreSQL`.
4. In a command line window, at the command line prompt, type **net user /delete postgres** and press **Enter**.

After uninstalling PostgreSQL, install RuggedNMS™ following the instructions in [Section 2.1, “Installing RuggedNMS™ on Windows”](#).

## 2. Installation

### 2.1. Installing RuggedNMS™ on Windows

This chapter describes how to install RuggedNMS™ for the first time on Microsoft Windows.

Before installing RuggedNMS™, ensure that your server meets the minimum hardware and operating system requirements. See [Section 1.2, “RuggedNMS™ Installation Requirements”](#).

The installation package installs RuggedNMS™ and supporting third-party applications in the following steps:

1. Initial RuggedNMS™ setup
2. Apache HTTP Web Server
3. PostgreSQL Database
4. Sun Java SE Development Kit
5. Final RuggedNMS™ setup

When you install RuggedNMS™ for the first time, the RuggedNMS™ package automatically launches each third-party installer in turn.



*When you upgrade an existing RuggedNMS™ installation, configuration files are saved in the `etc-backup` subdirectory of the RuggedNMS™ installation directory. Any site customization made to the configuration files needs to be re-applied to the newly installed files. This is especially important for the discovery settings, which are reconfigured using the RuggedNMS™ web interface. The `etc-backup\` subdirectory contains archived information from previously installed RuggedNMS™ versions. This information can only be used for reference. Under no circumstances should the archived information be applied or copied to a newly-installed version of RuggedNMS™. The structure and content of configuration files may change from version to version, making the archived files incompatible with the current version.*

#### 2.1.1. Launching the RuggedNMS™ Installer

Follow these steps to launch the RuggedNMS™ installer.

##### Procedure 2.1. Launching the RuggedNMS™ Installer

1. Place the RuggedNMS™ disk in the server’s DVD drive. The installer should launch automatically. If the installer does not launch automatically, navigate to the DVD drive and double-click on `RNMSInstaller-1.5.0.exe`.

This message appears:

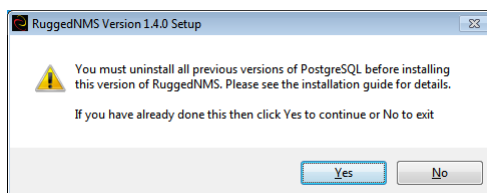


Figure 2.1. Uninstall Previous Versions message

## 2. Installation

2. Click **Yes**. The RuggedNMS™ installation wizard launches and displays the **RuggedNMS End User License** page.



Figure 2.2. RuggedNMS™ End User License page

3. Read and accept the end user license and click **Next**. A message indicating that you agree to accept the license appears.

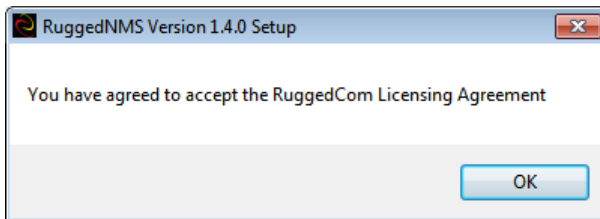


Figure 2.3. RuggedNMS™ License acceptance message

4. Click **OK**. The installation wizard displays the following prompt:



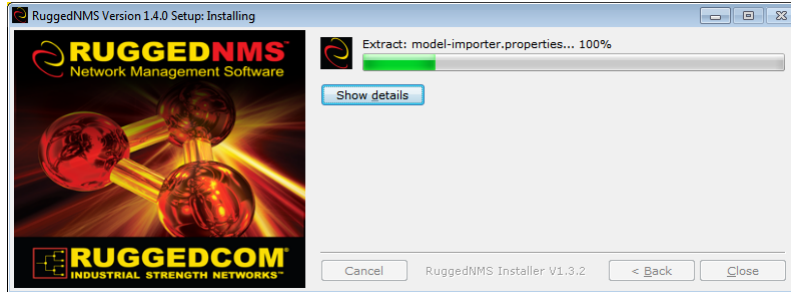
Figure 2.4. RuggedNMS™ Install as a Service prompt

RuggedNMS™ can be installed as a Windows service. As a Windows service, RuggedNMS™ starts automatically when you launch Windows and runs in the background. To run RuggedNMS as a service, select **Check to install RuggedNMS as a Windows service**. To install RuggedNMS as an application, clear the checkbox.

5. Click **Install**. The installer displays the installation progress.

## 2. Installation

---



**Figure 2.5. RuggedNMS™ Installation Progress dialog**

This completes the initial step in the RuggedNMS™ installation process. When you install RuggedNMS™ for the first time, the installer now automatically launches the Apache HTTP Web Server installation package. See [Section 2.1.2, “Installing the Apache HTTP Web Server”](#).

### 2.1.2. Installing the Apache HTTP Web Server

Follow these steps to install the Apache HTTP Web Server.

#### Procedure 2.2. Installing the Apache HTTP Web Server

1. Upon launching the Apache HTTP Web Server installation wizard, the **Apache HTTP Server 2.2 - Installation Wizard** dialog appears:

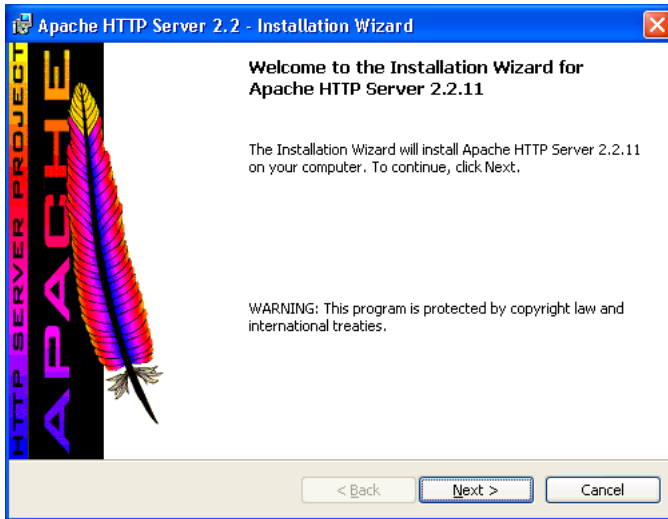


Figure 2.6. Apache HTTP Installation Wizard dialog

2. Click **Next**. The **License Agreement** page appears:

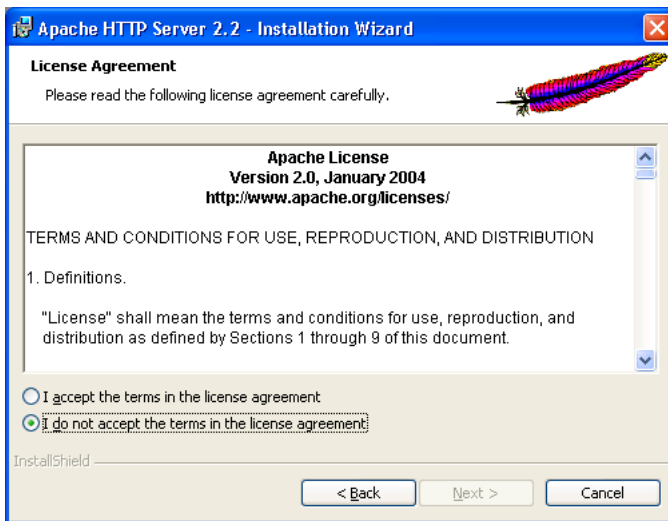


Figure 2.7. Apache License Agreement page

3. Read and accept the license agreement and click **Next**. The **Read This First** page appears:

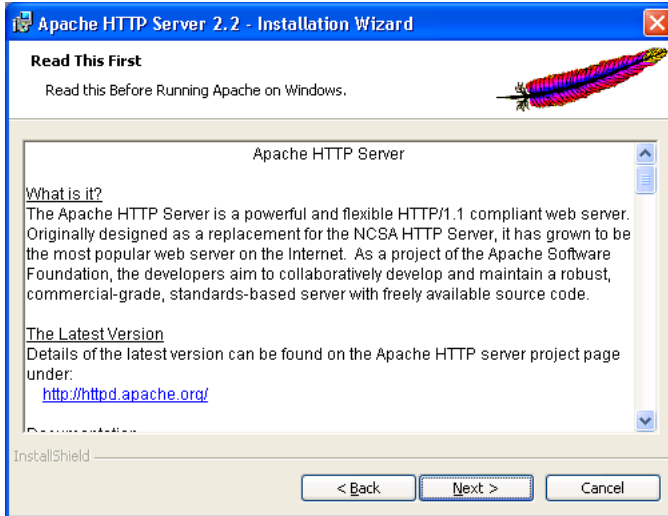


Figure 2.8. Apache Read This First page

4. Click **Next**. The **Server Information** page appears:

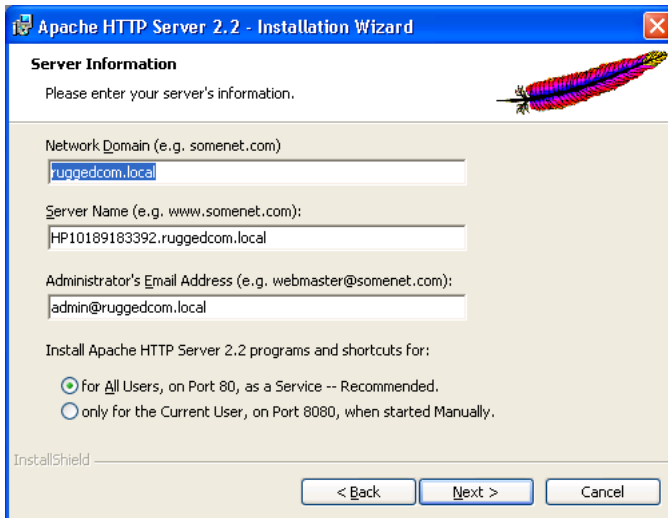


Figure 2.9. Apache Server Information page

5. If the fields are already populated, accept the default settings. If the fields are blank, use the following values:

- **Network Domain: localhost**
- **Server Name: localhost**
- **Administrator's Email Address: admin@localhost.com**

Accept the default settings or enter your settings in the fields and click **Next**. The **Setup Type** page appears:

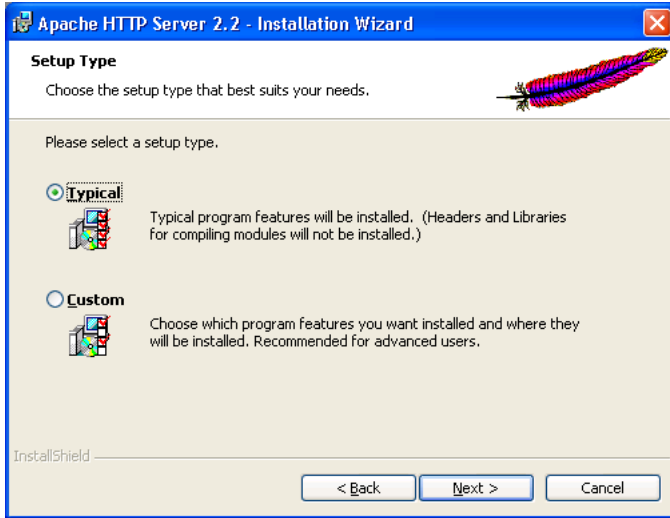


Figure 2.10. Apache Setup Type page

6. Select **Typical** and click **Next**. The **Destination Folder** page appears:

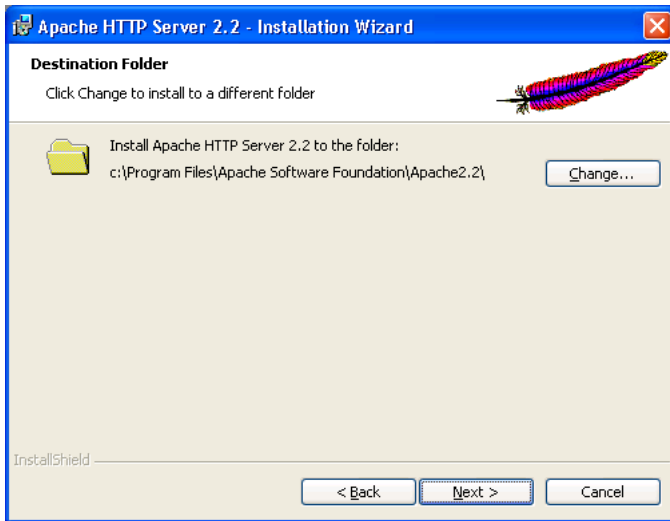


Figure 2.11. Apache Destination Folder page

7. Accept the default installation location, or click **Change** to select another directory. Click **Next**. The **Ready to Install the Program** page appears:

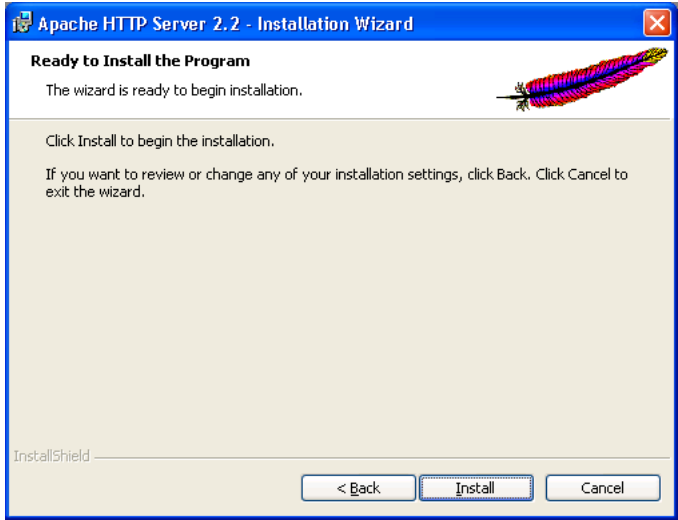


Figure 2.12. Apache Ready to Install page

- 8. Click **Next**. The **Installing Apache HTTP Server 2.2.11** page appears:

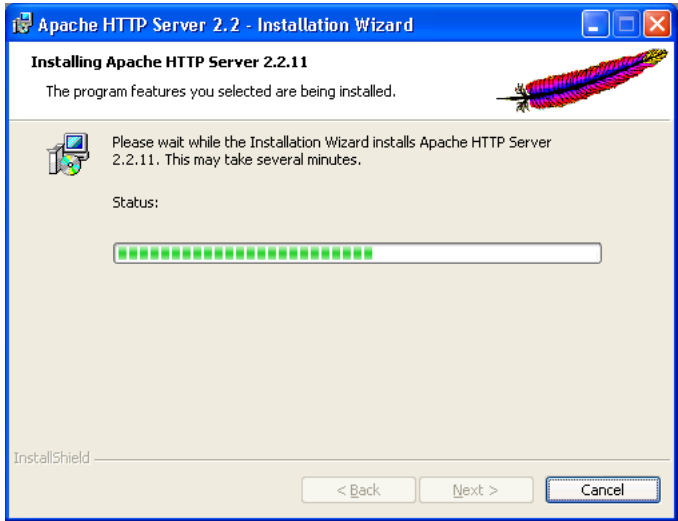
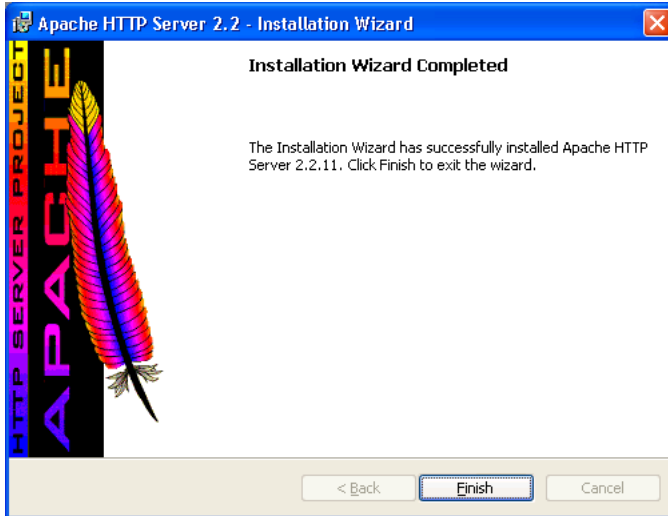


Figure 2.13. Apache Installation Status page

- 9. When the installation finishes, the **Installation Wizard Completed** page appears:



**Figure 2.14. Apache Installation Wizard Completed page**

10. Click **Finish**.

This completes the Apache HTTP Server installation. When you install RuggedNMS™ for the first time, the installer now automatically launches the PostgreSQL installation package. See [Section 2.1.3, “PostgreSQL Database Installation”](#).

### 2.1.3. PostgreSQL Database Installation

Follow these steps to install the PostgreSQL database.

#### Procedure 2.3. Installing the PostgreSQL Database

1. Upon launching the PostgreSQL Database installation wizard, the **Setup** dialog appears:

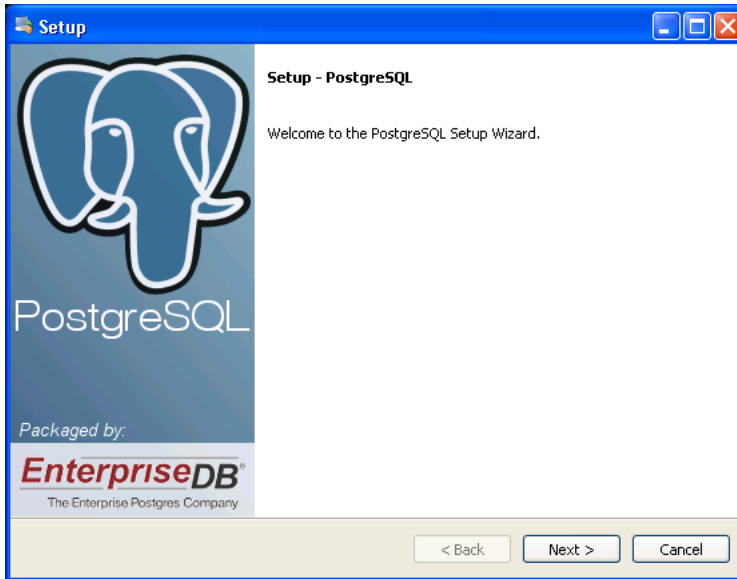


Figure 2.15. PostgreSQL Installation Wizard dialog

2. Click **Next**. The **Installation Directory** page appears:

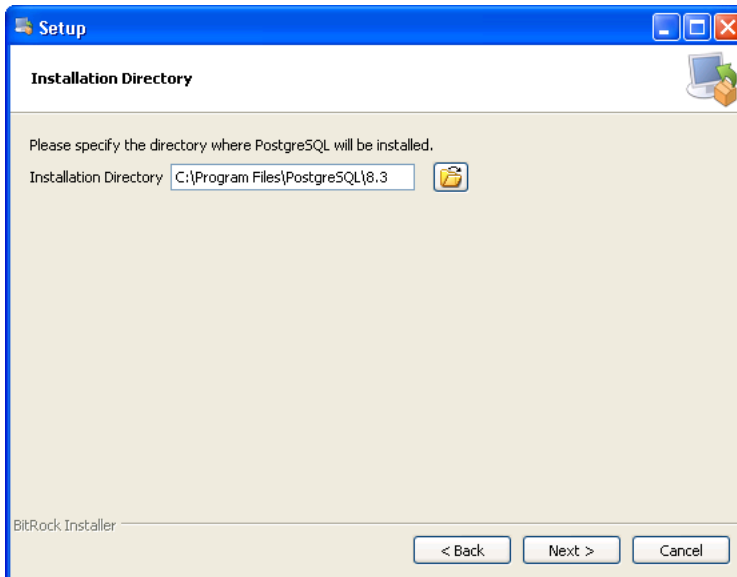



Figure 2.16. PostgreSQL Installation Directory page

3. Accept the default installation location, or click the  button to select another directory. Click **Next**. The **Data Directory** page appears:

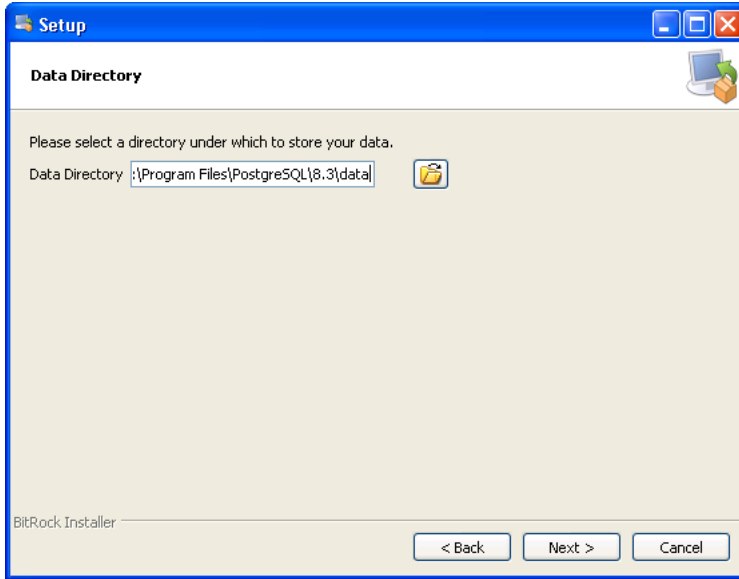



Figure 2.17. PostgreSQL Data Directory page

4. Accept the default installation location, or click the  button to select another directory. Click **Next**. The **Password** page appears:

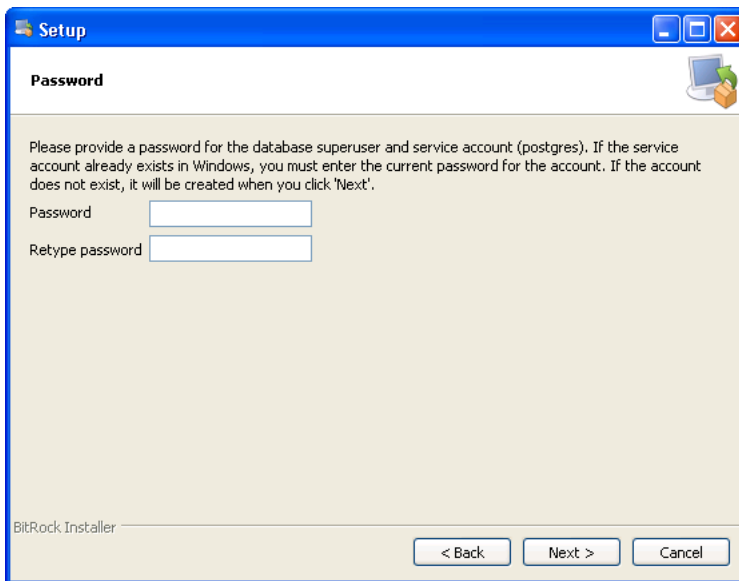

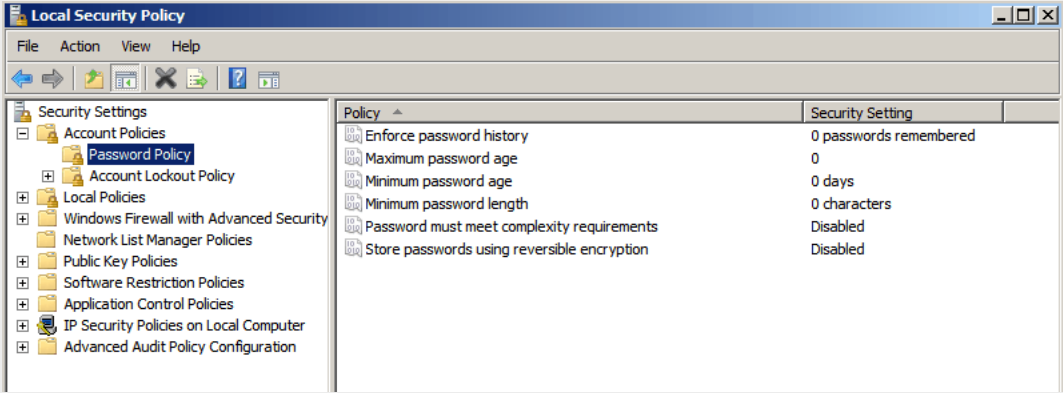


Figure 2.18. PostgreSQL Password page

5. In the **Password** and **Retype password** field, type **ruggednms**.

 *By default, Windows Server 2008 does not allow simple passwords. If your operating system does not allow simple passwords, you must set the Local Security Policy to allow the use of simple passwords.*

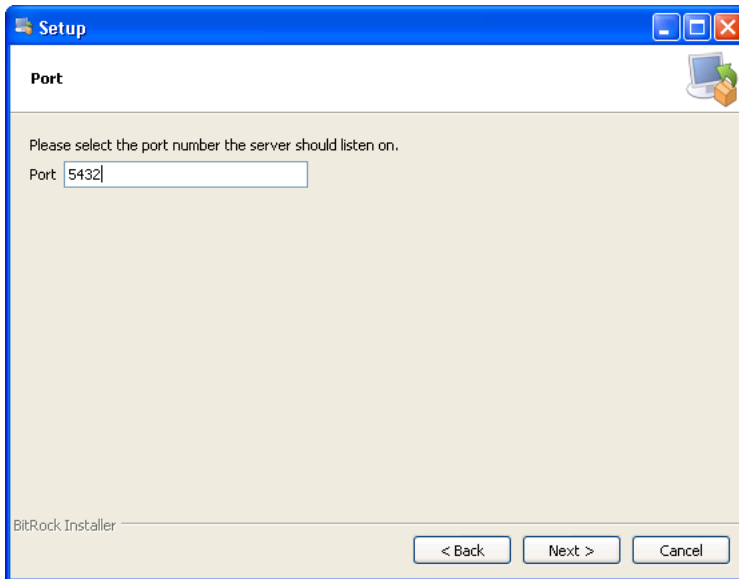
*On Windows Server 2008, select **Start > Administrative Tools > Local Security Policy**. On the **Local Security Policy** dialog, select **Account Policies** and **Password Policy**. Ensure that **Password must meet complexity requirements** is set to **Disabled**.*



Policy	Security Setting
Enforce password history	0 passwords remembered
Maximum password age	0
Minimum password age	0 days
Minimum password length	0 characters
Password must meet complexity requirements	Disabled
Store passwords using reversible encryption	Disabled

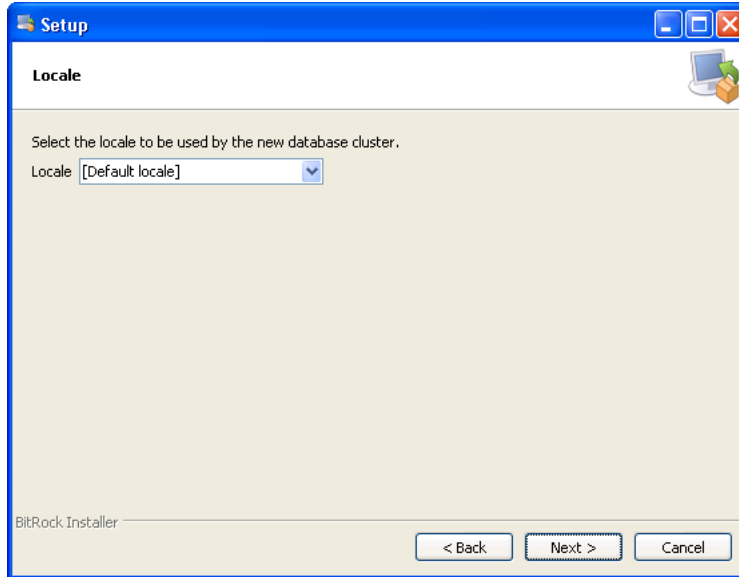
**Figure 2.19. Windows Server 2008 Local Security Policy**

6. On the PostgreSQL installation wizard **Password** page, click **Next**. The **Port** page appears.



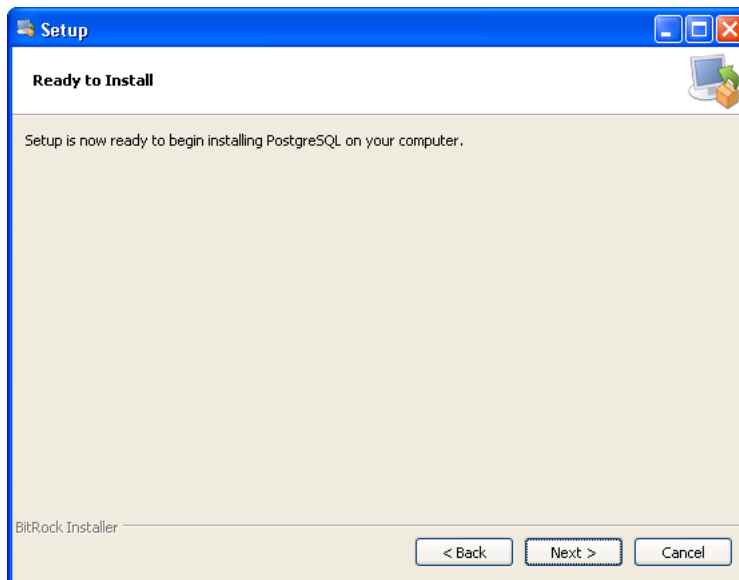
**Figure 2.20. PostgreSQL Port page**

7. Accept the default setting and click **Next**. The **Locale** page appears.



**Figure 2.21. PostgreSQL Locale page**

8. Accept the default setting, or select your locale from the list. Click **Next**. The **Ready to Install** page appears.



**Figure 2.22. PostgreSQL Ready to Install page**

9. Click **Next**. The **Installing** page appears.

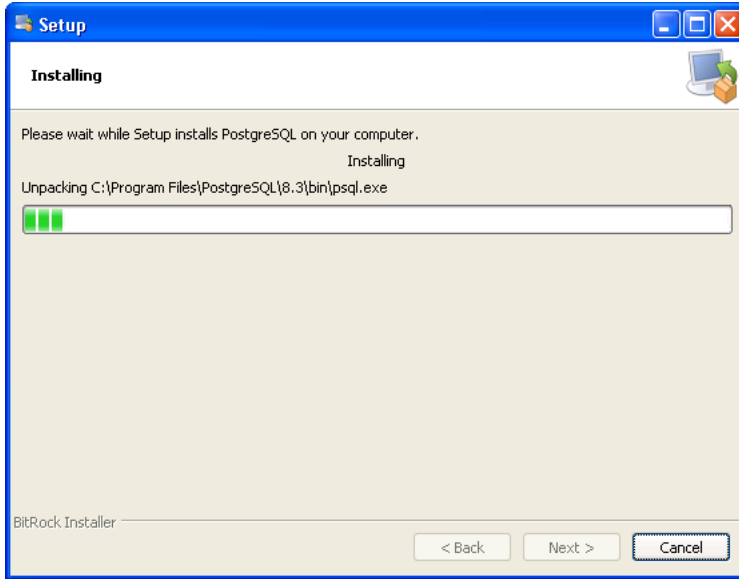


Figure 2.23. PostgreSQL Installing page

10. When the installation finishes, the **Completing the PostgreSQL Setup Wizard** page appears.

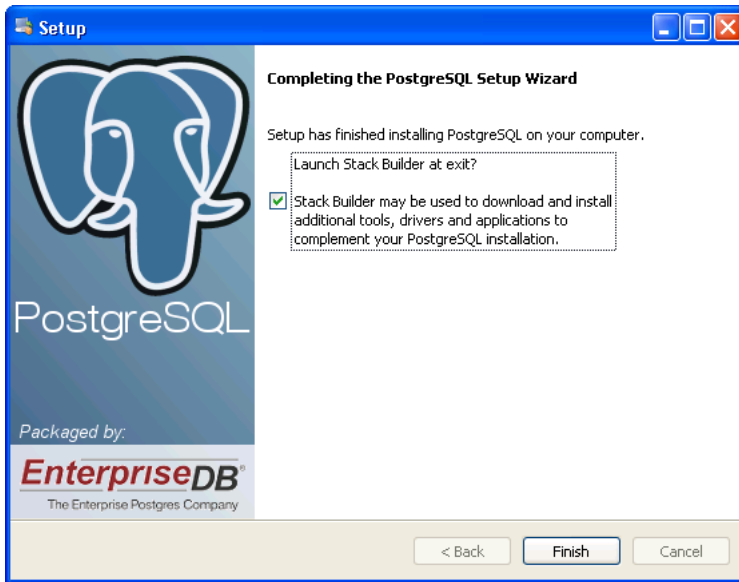


Figure 2.24. PostgreSQL Completing Setup Wizard page

11. Clear the **Launch Stack Builder at exit?** checkbox and click **Finish**.

This completes the PostgreSQL Database installation. When you install RuggedNMS™ for the first time, the installer now automatically launches the Java SE Development Kit installation package. See [Section 2.1.4, "Installing the Java SE Development Kit"](#).

### 2.1.4. Installing the Java SE Development Kit

Follow these steps to install the Sun Java SE Development Kit.

#### Procedure 2.4. Installing the Sun Java SE Development Kit

1. Upon launching the Sun Java SE Development Kit installation wizard, the **Java(TM) SE Development Kit 6 Update 20** dialog appears:

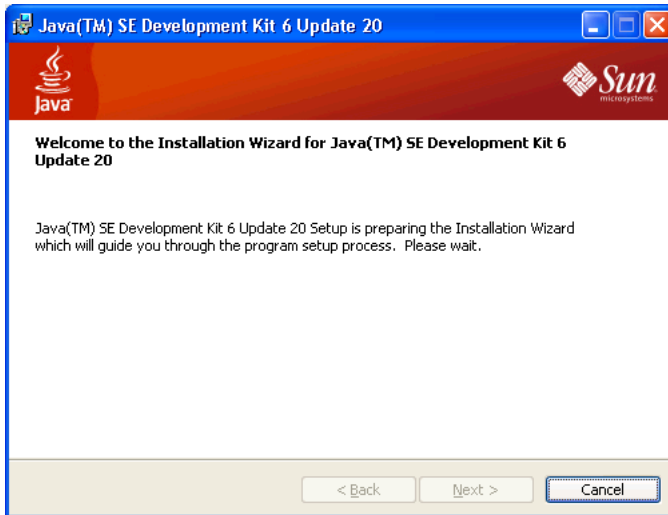


Figure 2.25. Sun Java SDK Installation Wizard dialog

2. The **License Agreement** page appears automatically:



Figure 2.26. Sun Java SDK License Agreement page

3. On the **License Agreement** page, click **Accept**. The **Custom Setup** page appears:

## 2. Installation

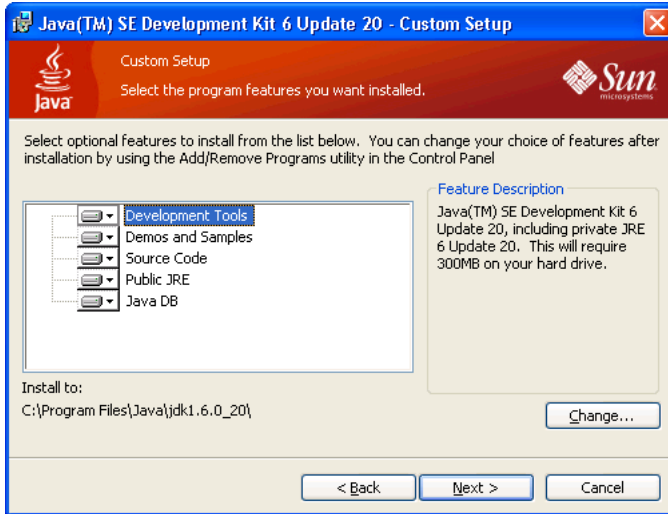


Figure 2.27. Sun Java SDK Custom Setup page

4. Click **Next**. The **Installing** page appears:

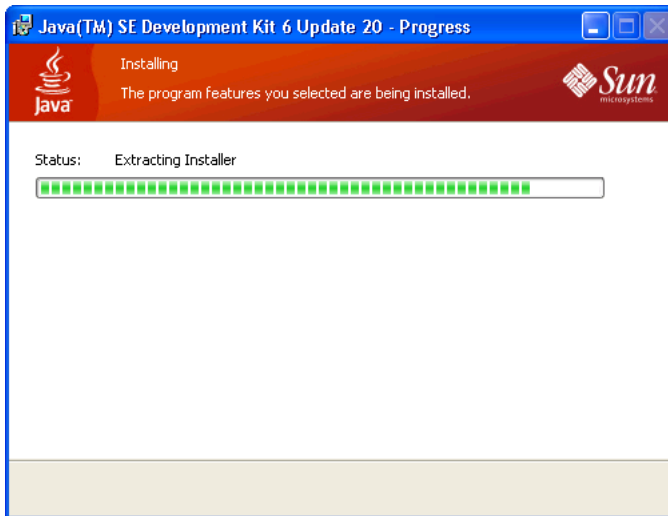


Figure 2.28. Sun Java SDK Installing page

5. The **Destination Folder** page appears:

## 2. Installation

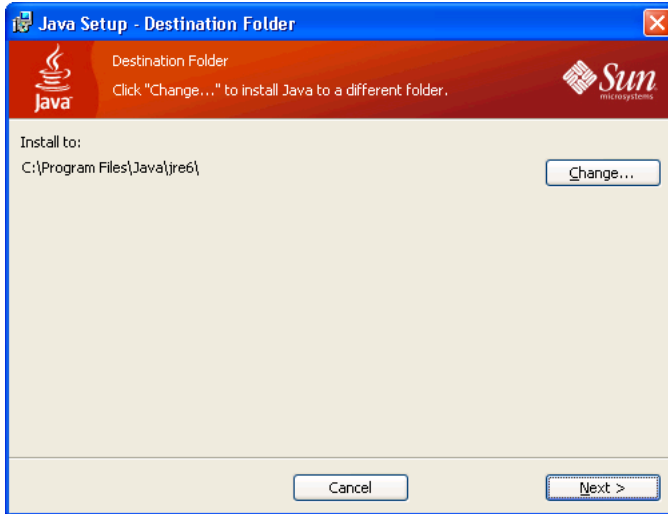


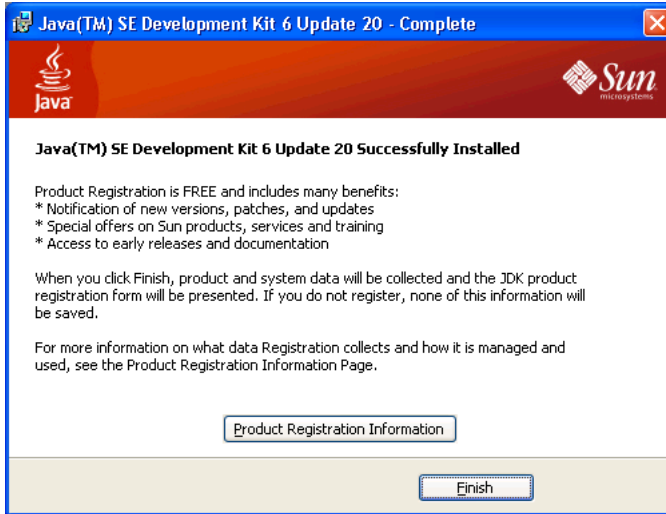
Figure 2.29. Sun Java SDK Destination Folder page

6. Accept the default installation location, or click **Change** to select another directory. Click **Next**. The **Installing Java** page appears.



Figure 2.30. Sun Java SDK Installing Java page

7. The when the installation finishes the **Java(TM) SE Development Kit 6 Update 20 Successfully Installed** page appears:



**Figure 2.31. Sun Java SDK Installation Complete page**

**8. Click Finish.**

This completes the Sun Java Development Kit installation. When you install RuggedNMS™ for the first time, the installer now automatically returns to the RuggedNMS™ installation package. See [Section 2.1.5, “Completing the RuggedNMS™ Installation”](#).

## 2.1.5. Completing the RuggedNMS™ Installation

After the RuggedNMS™ installation wizard installs the third-party components, follow these steps to complete the RuggedNMS™ installation.

### Procedure 2.5. Completing the RuggedNMS™ Installation

1. After installing the third-party components, this message appears:

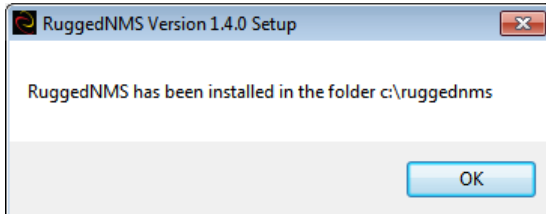


Figure 2.32. RuggedNMS™ Installation Folder message

2. Click **OK**. The **Completed** page appears:



Figure 2.33. RuggedNMS™ Installation Completed page



*To complete the RuggedNMS™ installation, you must configure the following subsystems before running RuggedNMS™:*

- *Device Discovery*
- *Device Credentials*
- *Configuration Management*

3. Click **Close**. The RuggedNMS™ installation wizard closes.
4. Open a Windows command line window. At the command line prompt, type **cd c:\ruggednms \scripts** and press **Enter**.
5. At the command line prompt, type **update\_env** and press **Enter**.
6. Disable the Windows firewall. Shut down and restart Windows.
7. To use RuggedNMS mapping, you must add a DNS entry for **rnms.ruggednms.info** to your DNS server, or to the HOSTS file on each RuggedNMS user's Windows workstation.
  - To make changes to the HOSTS file on Windows 7 or Windows Server 2008, you must edit the file using administrator user privileges.

The HOSTS file is located in **Windows\System32\drivers\etc**. Open the file with a text Editor. At the end of the file, add a new line and the following entry:

```
nnn.nnn.nnn.nnn rnms.ruggednms.info #RuggedNMS Server
```

— where `nnn.nnn.nnn.nnn` is the IP address of your RuggedNMS server.

- For instructions on how to add a DNS entry to your DNS server, refer to your DNS server documentation.

This completes the RuggedNMS™ installation.

- If you are installing an evaluation version of RuggedNMS™, the system is now ready to use. A temporary license key is installed on your evaluation system. The temporary key limits your RuggedNMS system to 20 network devices. To launch RuggedNMS™, see [Section 2.3, “Launching RuggedNMS™”](#).
- If you are installing a licensed version of RuggedNMS™, you must obtain and install a Product Activation Key (PAK). For instructions, see [Section 2.2, “Licensing RuggedNMS™”](#).
- On your client workstations, clear the web browser cache before accessing the updated version of RuggedNMS™.

## 2.2. Licensing RuggedNMS™

Follow these steps to license your RuggedNMS™ server.

### Procedure 2.6. Licensing RuggedNMS™

#### 1. For 32-bit Windows operating systems:

Select **Start > All Programs > RuggedCom > RuggedNMS > get\_systemID**.



*You can also open a command line window and type **get\_systemID** and press **Enter**.*

#### For 64-bit Windows operating systems:

Select **Start > All Programs > RuggedCom > RuggedNMS > get\_systemID-64**.



*You can also open a command line window and type **get\_systemID-64** and press **Enter**.*

A dialog box appears and displays your system identifier.

2. Call or email RuggedCom support with this information to obtain a Product Activation Key (PAK) file. RuggedCom support will e-mail your PAK file to you.
3. On the RuggedNMS™ server, save your PAK file to the `c:\ruggednms\etc` directory.

Your RuggedNMS™ installation is now licensed and ready for use.



*If you are upgrading an existing RuggedNMS™ installation, your existing PAK file is automatically copied from your existing installation to your new installation.*

## 2.3. Launching RuggedNMS™



*When installing RuggedNMS™ version 1.5 on Windows 7 or Windows Server 2008, you must manually delete the **c:\ruggednms\share\vrdd\temp** directory before starting the application. This step is required to correctly initialize the extended performance data collectors*

- If you installed RuggedNMS™ as a Windows application, do the following to launch RuggedNMS™:

Select **Start > All Programs > RuggedCom > RuggedNMS > start\_ruggednms**

- If you installed RuggedNMS™ as a Windows service, do the following to launch RuggedNMS™:

Select **Start > All Programs > RuggedCom > RuggedNMS > start\_service**



*For complete instructions on how to use RuggedNMS™, refer to the RuggedNMS™ User Guide.*

## 2.4. Re-installing RuggedNMS™ Components

If you are using a version of PostgreSQL earlier than version 8.3.11, you must uninstall PostgreSQL before installing RuggedNMS™ version 1.5.

After uninstalling PostgreSQL, install RuggedNMS™ following the instructions in [Section 2.1, “Installing RuggedNMS™ on Windows”](#).

### Procedure 2.7. Re-installing RuggedNMS™

1. Place the RuggedNMS™ disk in the server’s DVD drive. The installer should launch automatically. If the installer does not launch automatically, navigate to the DVD drive and double-click on `RNMSInstaller-1.5.0.exe`.

This message appears:

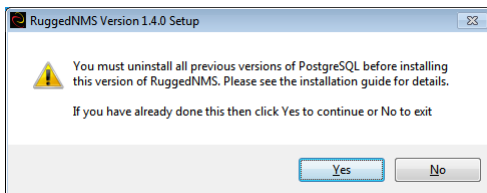


Figure 2.34. Uninstall Previous Versions of PostgreSQL message

**i** *If you are using a version of PostgreSQL earlier than version 8.3.11, you must uninstall PostgreSQL before installing RuggedNMS™ version 1.5.*

2. After ensuring that PostgreSQL earlier than version 8.3.11 is not installed, click **Yes**. The RuggedNMS™ installation wizard launches and displays the installed components page.

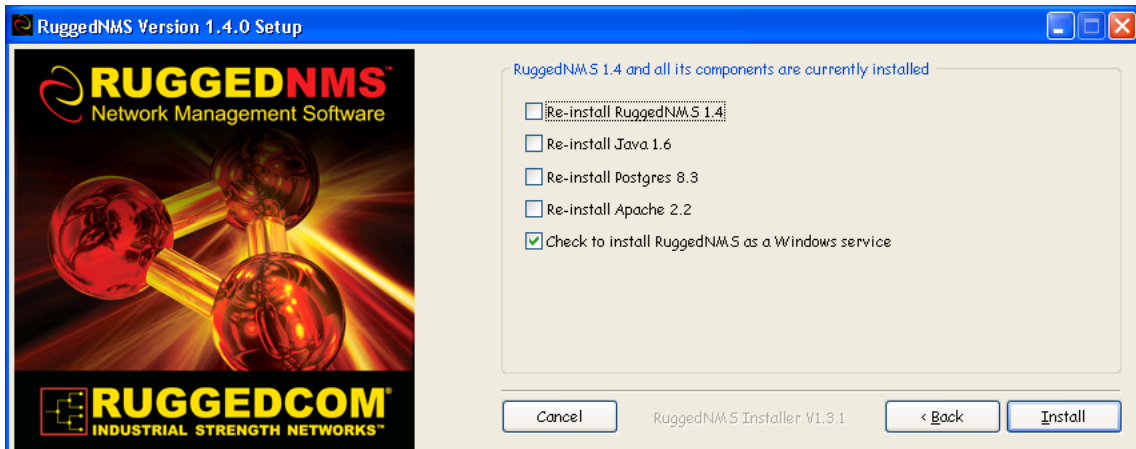


Figure 2.35. RuggedNMS Installation Wizard: Installed Components page

3. Select the components that you want to install.  
To install RuggedNMS™ as a Windows service, select **Check to install RuggedNMS as a Windows service**.  
To install RuggedNMS™ as a Windows application, select **Re-install RuggedNMS 1.5** and clear the **Check to install RuggedNMS as a Windows service** checkbox.
4. Click **Install**. The RuggedNMS™ installer launches the selected installation packages in turn. For instructions on how to use the various installation packages, see the following sections:

- [Section 2.1.2, “Installing the Apache HTTP Web Server”](#)
- [Section 2.1.3, “PostgreSQL Database Installation”](#)
- [Section 2.1.4, “Installing the Java SE Development Kit”](#)
- [Section 2.1.5, “Completing the RuggedNMS™ Installation”](#)

## 2.5. Notes on RuggedNMS™

### 2.5.1. General Notes

- It is assumed that the user has a good working knowledge of networking equipment and protocols, network management theory using SNMP, and understands MIB 2 layouts, terminology and implementations.

### 2.5.2. Managed Devices

- All devices to be managed by RuggedNMS must have SNMP configured and enabled. Community string and authentication data must be configured to provide “get” and “set” access to RuggedNMS, as appropriate for each device.
- SNMP Traps and remote syslog logging must be configured to transmit to the IP address of the RuggedNMS server.
- RuggedSwitch® Ethernet switches in the network must be running running ROS™ release 3.5.0 or higher to work properly with RuggedNMS Configuration Management.
- LLDP (Link Layer Discovery Protocol) should be enabled on all devices which support it.

### 2.5.3. Browser Support

- The RuggedNMS Mapping feature currently supports Microsoft Internet Explorer version 7 or higher, and Firefox 3.6 or higher. Mapping requires Adobe Flash Player 10 or higher to be installed for each web browser. The first time you launch Mapping, you may be prompted to install the Adobe Flash player if it is not already installed.
- Microsoft Windows XP, Vista, Windows 7 and Server 2003/2008 no longer allow Telnet sessions to be created from a link in Internet Explorer or Firefox. However, it is possible to modify the Windows XP and Server 2003 registry to allow Telnet sessions. This registry patch is available on the RuggedNMS web site at [www.ruggednms.com](http://www.ruggednms.com).

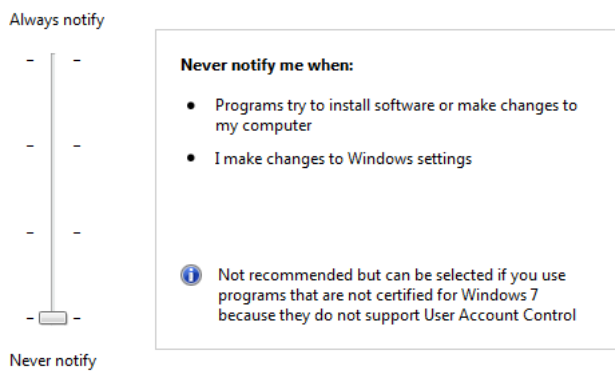
For Windows 7 and Server 2008, do the following: **Start > Control Panel > Programs > Turn Windows features on or off**. On the **Windows Features** dialog, select the **Telnet Client** checkbox and click **OK**.

### 2.5.4. How to turn off “User Account Control” on Windows 7

RuggedNMS must make use of low level system calls to send and receive ICMP Echo packets to discover devices and periodically test if those devices still exist. The program that does this is blocked by the **User Account Control** feature in Windows 7 and Server 2008. For RuggedNMS to work properly, this feature must be disabled.

To disable **User Account Control**, follow these steps:

1. Select **Start > Control Panel > User Accounts**. The **User Accounts** dialog appears.
2. Select **User Accounts**. The **Make changes to your user account** dialog appears.
3. Click the **Change User Account Control settings** link. A slide control appears.
4. Slide the control to **Never notify**.




**Figure 2.36. RuggedNMS™ Windows notification setting**

5. Click **OK** and then **Yes**.
6. Shut down and restart Windows.

### 2.5.5. RuggedNMS Server Environment

- To guarantee the reliability and responsiveness of RuggedNMS, it is designed to be run on dedicated hardware. For specific Operating System and hardware requirements, see [Section 1.2, “RuggedNMS™ Installation Requirements”](#).
- The following ports are used by RuggedNMS, and must not be allocated by other programs on the RuggedNMS server.

 *If any of these ports is in use, RuggedNMS will either not be able to initialize, or will run with reduced functionality*

*Future RuggedNMS development may make use of additional ports.*

Port number	TCP	UDP
162	✓	✓
514		✓
1099	✓	
1199	✓	
5222	✓	✓
5432	✓	
5817	✓	
5818	✓	
8080	✓	
8180	✓	
8181	✓	

**Table 2.1. RuggedNMS Ports**